

**Guidance for Local Health Departments on Ebola Virus Environmental Cleaning and Disinfection in Non-healthcare and Non-laboratory Settings<sup>1</sup>**

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**Background Information about Ebola Virus**

*Transmission:* Based on current U.S. Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) guidance<sup>2</sup>, and review of available scientific information, Ebola spreads through direct contact by touching the blood or other body fluids (such as feces, saliva, urine, vomit, and semen) of a person who is sick with Ebola virus disease (EVD). Infected blood or other body fluids can spread Ebola through contact with eyes, nose, or mouth or an open cut, wound, or abrasion. Transmission can also occur through exposure to objects (such as needles) that have been contaminated with infected blood or other body fluids. Published investigations of past outbreaks in Africa indicate that person-to-person transmission occurred through direct physical contact with symptomatic patients or deceased bodies during funeral rites or with body fluids of patients including heavy contamination with blood or other body fluids on objects such as linens.

Ebola is not spread through the air or by water, or in general, by food.<sup>3</sup> There is no evidence that mosquitoes or other insects can transmit Ebola virus. The role of minor or residual contamination on objects such as door handles or railings in transmission has not been established.

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<sup>1</sup> This guidance document is based on information current at the time it was written. Information regarding Ebola environmental management is an emerging issue in the United States and this guidance is subject to revision based on release of federal guidance and scientific information following publication.

<sup>2</sup> CDC: <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>  
WHO: <http://www.who.int/mediacentre/news/ebola/06-october-2014/en/>

<sup>3</sup> However, people in the affected countries in Africa may be at risk when handling contaminated “bush meat.”

*Persistence in the environment:* Viruses cannot reproduce in the environment outside of their host; exposed to the environment, they are inactivated over time. Some types of viruses are more resistant to inactivation. Ebola virus is a type that is more susceptible to inactivation over time. However, there is limited information about the precise length of time it can survive on environmental surfaces or in environmental media, or about how environmental factors (e.g., temperature, relative humidity, type of surface material, organic load, and light) affect its persistence.<sup>4</sup>

Currently, one published study directly addresses the environmental persistence of Ebola virus in a field setting. The study was conducted in an active treatment clinic during an Ebola outbreak. The study found that the virus was not detectable by either culture or polymerase chain reaction (PCR)<sup>5</sup> in wipe samples taken from surfaces within the clinic, with the exception of positive-control samples taken from a visibly bloody glove and skin surface. During the outbreak, the clinic followed a daily surface disinfection protocol by treating the floor each day and other visibly contaminated surfaces as needed.

*Cleaning and disinfection – general principles:* In general, routine cleaning practices and methods that remove soiling from materials and surfaces also help to remove disease-causing microorganisms from the environment. Based on the information above, the focus of cleaning and disinfection actions in the non-healthcare and non-laboratory settings should be to address locations, surfaces, and objects that have visible soiling or contamination with blood and other body fluids from someone with symptoms of EVD. Certain high-contact materials that might not be visibly soiled, such as linens from a bed used by such a person, are also covered by this cleanup guidance.

Decisions regarding the need for cleaning and disinfection actions should take into account the clinical state of the patient. For example, a person who is not symptomatic is not shedding virus and, therefore, no special cleaning or disinfection activities are needed. Likewise, if a person with EVD develops fever, but has no additional symptoms prior to seeking treatment in a healthcare facility, there is no indication that additional cleaning or disinfection actions are needed. However, additional targeted cleaning and disinfection would be appropriate for a primary contact who becomes ill with symptoms that result in visible contamination with blood or other body fluids.

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<sup>4</sup> In laboratory experiments, Ebola virus cultures dried onto glass slides and kept in the dark at room temperature and moderate relative humidity (i.e., relatively benign environmental conditions) showed that approximately 0.01% of the original virus load remained viable after six days. A follow-up experiment found that exposure of dried cultures to UV light for up to 30 seconds achieved approximately the same level of inactivation. Other laboratory studies of Ebola and other hemorrhagic fever viruses suggest that, in general, low temperatures and darkness can enhance environmental persistence. Experimental studies of other enveloped viruses (coronaviruses and HIV) suggest that, in water, osmotic pressure and the presence of organic materials from sewage treatment effluent can increase environmental inactivation.

<sup>5</sup> Culture detects live virus that can cause infection. PCR detects the presence of viral nucleic acid and can sometimes be detected even if live virus are not present.

## **Case Definitions for Ebola Virus Disease**

*Person Under Investigation (PUI)* – Person Under Investigation, or PUI, means a person who has both consistent symptoms and risk factors, as defined by CDC at: <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>.

*Confirmed Case* – Confirmed Case means a case with laboratory-confirmed diagnostic evidence of Ebola virus infection as defined by CDC at: <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>.

## **Cleaning and Disinfection Definitions**

*Cleaning product* – A product intended to remove soiling from a surface or material through the combined action of mechanical scrubbing, detergents, and water. Cleaning products are not intended to kill microorganisms, but they can reduce microbial load on surfaces through physical removal. Cleaning is a necessary first step to disinfection; without initial cleaning the effectiveness of a sanitizer or disinfectant will be reduced.

*Cleanup* – Used here to refer to the entire process of assessing the need for cleaning and disinfection in a location and conducting any needed cleaning, disinfection and management of waste following the protocols presented in Attachments 1 and 2.

*Disinfectant product* – An antimicrobial pesticide product that makes a specific claim, on the product label, that it kills certain microorganisms. Any product that makes an antimicrobial claim must be registered<sup>6</sup> by the New York State Department of Environmental Conservation (DEC) and by the federal Environmental Protection Agency (EPA)<sup>7</sup>. Use of a disinfectant product is a form of environmental decontamination, but is not considered treatment of regulated medical waste under DEC rules.

*Routine cleaning* – Use of a cleaning product to reduce soil load on a surface, textile, or other object. Routine cleaning includes wearing gloves and using proper hand washing, to minimize potential exposure to cleaning chemicals and contaminants present in soil load.

## **Frequently Asked Questions about Cleaning and Disinfecting**

The following questions address specific details regarding cleaning and disinfection in the non-healthcare and non-laboratory settings, where a PUI or confirmed case of EVD was present, based on the general principles described above.

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<sup>6</sup> “Registration” means that a pesticide product has been evaluated and accepted for sale and use by the EPA. Such pesticides will have an “EPA Registration Number” on the product label. An antimicrobial pesticide product must also be registered by the New York State Department of Environmental Conservation before it can be sold or used in New York State.

<sup>7</sup> More information on antimicrobial pesticide registration is available at: <http://www2.epa.gov/pesticide-registration/antimicrobial-pesticide-registration>

*Non-healthcare or non-laboratory setting where a PUI or confirmed case of EVD was present.*

**Q: What are the recommended cleanup procedures for furnishings and household items contaminated with blood or other body fluids?**

**A:** Follow the recommendations for selecting personal protective equipment (PPE) provided in Attachment 1. Follow the recommended cleanup protocols listed in Attachment 2 for cleaning, disinfecting, and proper handling and packaging of all items visibly contaminated with blood or other body fluids.

**Q: Who is responsible for cleanup?**

**A:** In general, property owners are responsible for cleanup.

**Q: Who should review cleaning plans prepared by cleaning contractors and do they require approval?**

**A:** Although approval is not required for cleaning plans, cleaning contractors should demonstrate that they are capable of satisfying the guidance provided in Attachments 1 and 2. Local Health Departments should review cleanup plans with emphasis on assuring that the plan is consistent with Attachments 1 and 2, as well as the most current guidance from the Occupational Health and Safety Administration (OSHA) on worker health and safety.<sup>8</sup>

**Q: What types of products are recommended for routine cleaning and for cleaning surfaces that are to be disinfected?**

**A:** Routine household cleaning products that contain soap or a detergent can be used.

**Q: What disinfection products are recommended?**

**A:** For disinfection on hard, non-porous surfaces, use an EPA- and DEC-registered disinfectant product labeled as effective against non-enveloped viruses (such as norovirus). Non-enveloped viruses are more resistant to disinfectants than enveloped viruses such as Ebola. As a precaution, (and because no registered disinfectant products are specifically labeled for Ebola virus) selection of a disinfectant product with a higher potency than what is normally required for an enveloped virus is being recommended at this time. Carefully follow the label directions to ensure effective disinfectant concentration and contact time and safety of use.

Any visibly contaminated materials that are not comprised of exclusively hard, non-porous surfaces must be carefully packaged, transported, and disposed of in accordance with state and federal regulations. Porous materials include but are not limited to linens, clothing, rugs, mattresses, upholstered furniture, carpets, and other porous textiles. See Attachments 1 and 2.

**Q: Is any environmental clearance sampling recommended to show that cleaning is complete?**

**A:** No. Environmental sampling before or after cleaning is not recommended at this time, because standardized environmental clearance sampling protocols do not currently exist.

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<sup>8</sup> See: [https://www.osha.gov/Publications/OSHA\\_FS-3756.pdf](https://www.osha.gov/Publications/OSHA_FS-3756.pdf)

**Q: Are there special cleaning or disinfection recommendations for surfaces and household items that do not have visible contamination with blood or other body fluids?**

A: No. In general, use routine cleaning when there is no visible contamination. However, when cleaning an area that has been occupied by a PUI or person with laboratory-confirmed EVD, consider whether certain high-contact materials – such as linens from a bed that was used by the PUI or person with laboratory-confirmed EVD – might need to be managed as contaminated waste following the guidance in Attachments 1 and 2, even if visible contamination with blood or body fluids is not present.

**Q: Can cleanup be limited only to the rooms where the patient visited, or must the entire living space be cleaned?**

A: Cleanup can be limited to locations visibly contaminated by blood or other body fluids. As mentioned, use routine cleaning when there is no visible contamination.

**Q: Should outside surfaces or items in the outside environment (e.g., patio furniture, sidewalks) be cleaned or disinfected?**

A: Clean and disinfect visibly contaminated outside surfaces and items in the same manner as inside surfaces and items. As mentioned, use routine cleaning when there is no visible contamination.

**Q: Can time and temperature be considered as an alternative to cleaning? The CDC references a study which found that, under certain lab conditions, a small fraction of the virus load placed on a surface can still be active for up to six days. If the indoor environment of concern does not need to be immediately occupied, should cleaning only take place after a six day waiting period?**

A: No, time and temperature should not take the place of cleaning and disinfection.

**Q: Are normal household dishwashing procedures adequate for cleaning?**

A: Treat dishes, cookware, utensils and, other washable kitchen items the same as other household items. That is, clean and disinfect items that are visibly contaminated with blood or body fluids following Attachments 1 and 2. Use routine cleaning for items without visible contamination.

**Q: Are there cleaning procedures that are NOT recommended?**

A: DO NOT employ cleaning methods that could generate aerosols such as steam-cleaning or power washing.

DO NOT vacuum without HEPA (high-efficiency particulate air) filtration.

DO NOT use compressed air, pressurized water, or similar procedures, which might create droplets of infectious materials.

**Q: What regulations apply to professional cleaning contractors?**

A: As with all private employers in the U.S., professional contractors must comply with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens (29 CFR 1910.1030), Hazard Communication (29 CFR 1910.1200) and Personal Protective Equipment

(29 CFR 1910.132) Standards, and all other applicable regulations. Additional information is posted on the OSHA web page for Ebola: <https://www.osha.gov/SLTC/ebola/standards.html>.

**Q: Are there special cleaning or disinfection recommendations for locations that have been occupied by asymptomatic persons with EVD exposure, as defined by the CDC?**

A: No. Persons without active symptoms cannot transmit EVD. This includes individuals who have been in contact with an EVD-infected person but have no symptoms and persons who have completely recovered from EVD. Use routine cleaning in locations where such persons live, work, or visit.

*Heating, ventilating, and air conditioning (HVAC) systems*

**Q: What cleaning or disinfection is necessary for HVAC systems? Should air filters, humidifiers, fans, be decontaminated?**

A: Ebola transmission does not occur by aerosol route. Therefore, no special cleaning or disinfection actions are recommended for HVAC systems or components, such as air filters, humidifiers, or fans.

*Cleaning/disinfection of private motor vehicles and public transportation systems*

**Q: Are there recommendations for cleanup of vehicles and public transportation systems contaminated by blood or other body fluids of a patient with EVD?**

A: Clean and disinfect hard, non-porous items with visible contamination. Any visibly contaminated materials that are not comprised of exclusively hard, non-porous surfaces must be carefully packaged, transported, and disposed of in accordance with state and federal regulations. See Attachments 1 and 2.<sup>9</sup>

**Q: Who would be responsible for cleaning and disinfection for public transportation?**

A: Operators and public transportation authorities are responsible for cleaning and disinfection for public transportation.

*Solid waste handling<sup>10</sup>*

**Q: Are there guidelines for waste sorting and disposal?**

A: Specific waste-handling precautions are described in Attachments 1 and 2. Keep wastes with visible contamination separate from other household waste.

**Q: How do I handle materials and objects that have no visible indication of direct contamination with blood or other body fluids from a PUI or person with laboratory confirmed EVD?**

A: In most cases, use routine cleaning and waste-handling practices. Keep wastes with visible contamination separate from other household waste. Consider whether certain high-contact materials such as linens from a bed that was used by a PUI or person with laboratory-confirmed

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<sup>9</sup> Note that CDC has developed guidance for cleaning and disinfection on airplanes where a sick traveler may have EVD: <http://www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html#personnel>.

<sup>10</sup> Solid waste is defined in DEC Part 360 regulations: <http://www.dec.ny.gov/regs/4415.html>

EVD might need to be managed as contaminated waste following the guidance in Attachments 1 and 2, even if visible contamination with blood or body fluids is not present.

Wastewater handling

**Q: Can the wastewater associated with the cleaning be discharged into the existing plumbing/sanitary sewer or into an individual septic system?**

A: Yes. Wastewater from cleaning can be discharged into existing sanitary sewer lines or an individual septic system. Ebola virus is more sensitive to environmental inactivation than many other infectious agents. In previous outbreaks of Ebola in Africa, no transmission was documented through incidental exposure to contaminated wastewater. CDC is reportedly developing guidance for sewage workers and Ebola.<sup>11</sup> DOH will post the guidance when it is available.

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<sup>11</sup> <http://www.watereuse.org/node/3461>

## ATTACHMENT 1

New York State Department of Health  
Center for Environmental Health

### **Guidance on the Selection and Use of Personal Protective Equipment for Cleaning Spaces Occupied by a Person with Ebola Virus Disease in Non-Healthcare and Non-Laboratory Settings**

#### **Summary**

Personal protective equipment (PPE) should be worn when cleaning surfaces and materials that have visible blood or other body fluids. The PPE should cover skin, eyes, and mucous membranes. The selection of the specific types of PPE to be used in a given situation should be made on a case-by-case basis, considering factors such as the specific tasks to be performed, the amount of blood or body fluids to be cleaned, and the amount of time the PPE needs to be worn.

#### **Scope and Applicability**

This guidance on PPE is intended for the cleaning of blood and other body fluids in non-healthcare and non-laboratory settings. These settings include, but are not limited to, workplaces, private residences, public housing, public transportation, hotels and motels, homeless shelters, restaurants, theaters, and other places of public and private congregation. Guidance developed for specific settings should be followed when they are available. For example, the Centers for Disease Control and Prevention (CDC) has published guidance on PPE for cleaning commercial aircraft (<http://www.cdc.gov/quarantine/air/managing-sick-travelers/ebola-guidance-airlines.html>).

#### **Routes of Exposure – What Needs to be Protected?**

Ebola spreads through direct contact by touching the blood or other body fluids (such as feces, saliva, urine, vomit, and semen) of a symptomatic person who is sick with EVD. Infected blood or other body fluids can spread Ebola through breaks in your skin or contact with eyes, nose, or mouth. Transmission can also occur through exposure to objects (such as needles) that have been contaminated with infected blood or other body fluids.

PPE should be selected and used to protect skin, eyes, and mucous membranes from direct contact with surfaces, materials, and equipment that may be contaminated with blood or other body fluids. PPE should also provide protection from splashes and large droplets. Respiratory protection, such as an N95 mask, is not necessary but may be worn for coverage of the nose and mouth.



## **Selection of PPE**

The selection of PPE should be made on a case-by-case basis, taking into consideration factors such as the specific tasks to be performed, the amount of blood or body fluids to be cleaned, and the amount of time the PPE needs to be worn. PPE should:

- Provide full coverage of skin, eyes, and mucous membranes.
- Protect against splashes and large droplets.
- Fit properly. This may require having different sizes available for different workers.
- Allow adequate range of motion and not interfere with cleaning tasks.
- Be simple to put on and remove.
- Be resistant to tears, abrasions, punctures, and wear, particularly in areas that have direct contact with surfaces.
- Be disposable or easily cleanable, e.g. no hidden recesses that can trap materials.

PPE should include:

- Waterproof gloves
- Facemask that covers nose and mouth
- Face shield \*
- Fluid-resistant or impervious coveralls
- Closed-toe shoes and shoe covers

For additional protection when large amounts of blood or body fluids are present, consider using:

- Double-gloves
- Waterproof boots
- Coveralls that have integral hoods

\* Use of goggles should be considered as an addition to the face shield in situations where increased eye protection from chemical splashes is needed.

## **Training**

Training on proper use of PPE is essential to achieving the intended level of protection. Persons that use PPE should receive training prior to use and periodically as needed. Elements of training should include:

- Routes of exposure and role of PPE as protective gear.
- Limitations of PPE.
- Proper donning and doffing (dressing and undressing) procedures.
- Signs and symptoms of heat stress.
- Evaluating PPE for tears, abrasions, and signs of wear.
- Determining when higher levels of PPE are needed.

## **Putting On (Donning) and Removing (Doffing) PPE**

Proper donning of PPE is **critical** to ensure adequate protection during use. Proper removal is **critical** for avoiding contact with contaminated PPE. Persons should be trained on procedures for putting on and removing PPE. These procedures should be practiced by the user to attain familiarization and proficiency prior to wearing them in a contaminated environment.

**After removing PPE it should either be properly disinfected, if possible, or handled as contaminated waste. After removing PPE, perform proper hand hygiene by washing hands thoroughly using soap and water or by using a waterless alcohol-based hand sanitizer with at least 60% alcohol.** Hand hygiene following glove removal further ensures that the hands will not carry potentially infectious material that might have penetrated through unrecognized tears or that could contaminate the hands during glove removal. If hands are visibly soiled, use soap and water, not alcohol-based hand rubs.

## **Heat Stress**

PPE inhibits the body's natural thermal regulating properties. This is particularly true for water impermeable clothing, which reduces the ability of the body to cool. The degree of stress placed on the body by PPE is additionally influenced by the level of activity, the duration of work, the physiologic status of the wearer, ambient temperature and humidity, and other factors.

Workers who may wear PPE for an extended period of time or in hot environments should receive training on the recognition and prevention of heat stress. Additional information is available at: <http://www.cdc.gov/niosh/topics/heatstress>

## **Occupational Safety and Health Administration (OSHA)**

As with all private employers in the U.S., professional contractors must comply with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens (29 CFR 1910.1030), Hazard Communication (29 CFR 1910.1200) and Personal Protective Equipment (29 CFR 1910.132) Standards, and all other applicable regulations. Additional information is posted on the OSHA web page for Ebola: <https://www.osha.gov/SLTC/ebola/standards.html>

## ATTACHMENT 2

### **Guidelines for Environmental Infection Control and Cleanup of Homes, Public Spaces, and other Non-healthcare and Non-laboratory Settings Contaminated by Body Fluids where a PUI or Confirmed Case of EVD was present**

#### **Introduction**

This document provides recommendations for environmental infection control and cleanup in non-healthcare and non-laboratory settings that were contaminated with human blood or other body fluids (including urine, feces, saliva, semen and vomit) from a person who is identified as a Person Under Investigation (PUI) or Confirmed Case of EVD.

#### **When to use these guidelines**

These guidelines apply to homes, public spaces, and other non-healthcare and non-laboratory settings contaminated with blood or body fluids where a person who is a PUI or Confirmed Case was present. Hiring a professional cleaning contractor is recommended.

No special environmental infection control measures are required in places where persons without active EVD symptoms live, work, or visit. Persons without active symptoms cannot transmit EVD, including individuals who have been in contact with an EVD-infected person but have no symptoms and persons who have completely recovered from EVD.

#### **Cleanup Procedures for Professional Cleaning Contractors**

The goal of cleanup is to return the property and its contents to a state of hygiene that poses no risk of exposure to occupants to Ebola virus. This must be achieved without the threat of exposure to those conducting cleanup. Cleaning contractors should make sure employees follow these steps when cleaning potentially contaminated homes, public spaces, and other non-healthcare and non-laboratory settings.

Follow the recommended Occupational Safety and Health Administration (OSHA) guidance titled "Cleaning and Decontamination of Ebola on Surfaces."<sup>12</sup>

Additionally, follow the steps below for cleaning and disinfection inside the restricted work area. Use routine cleaning procedures in areas outside the restricted work area:

1. Assess all areas known or thought to have been contaminated with blood or other bodily fluids and isolate the work area from non-contaminated areas. Restrict access to the work area until cleanup is complete. Use caution tape or warning signs to warn the public and keep them away from the site.
2. Ensure adequate ventilation in areas where workers are using disinfectants, including by opening windows and doors, or using mechanical ventilation equipment.

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<sup>12</sup> Available at: [https://www.osha.gov/Publications/OSHA\\_FS-3756.pdf](https://www.osha.gov/Publications/OSHA_FS-3756.pdf)

3. Wear appropriate personal protective equipment (PPE) as described in Attachment 1 and OSHA guidance.<sup>13</sup>
4. DO NOT employ cleaning methods that could generate aerosols such as steam-cleaning or power washing inside the restricted work area.
5. DO NOT vacuum without HEPA (high-efficiency particulate air) filtration.
6. DO NOT use compressed air, pressurized water or similar procedures, which might create droplets of infectious materials inside the restricted work area.
7. Clean surfaces before they are disinfected. Many commercial disinfectants include a cleanser (such as soap or a detergent), which allows for cleaning and disinfection at the same time.
8. For disinfection on hard, non-porous surfaces, use an EPA and DEC registered disinfectant product labeled as effective against non-enveloped viruses (such as norovirus). Non-enveloped viruses are more resistant to disinfectants than enveloped viruses such as Ebola. As a precaution, (and because no registered disinfectant products are specifically labeled for Ebola virus) selection of a disinfectant product with a higher potency than what is normally required for an enveloped virus is being recommended at this time. Carefully follow the label directions to ensure effective disinfectant concentration and contact time.
9. To reduce the risk of exposure to body fluids during the additional steps necessary to clean and disinfect porous materials, any visibly contaminated materials that are not comprised exclusively of hard, non-porous surfaces must be carefully packaged, transported, and disposed of in accordance with state and federal regulations. Waste must not be shredded or reduced in size prior to packaging, transport, and disposal. This includes but is not limited to linens, clothing, rugs, mattresses, upholstered furniture, carpets, and other porous textiles.
10. Consider whether certain high-contact materials such as linens from a bed that was used by a PUI or person with laboratory-confirmed EVD might need to be managed as contaminated waste, even if visible contamination with blood or body fluids is not present. See the section below titled **Waste Disposal**.
11. Large spills of liquid blood, body fluids, and any fluids visibly contaminated with blood or body fluids should be removed with disposable absorbent materials before cleaning and disinfecting the surface. Cover spills with absorbent material (e.g., paper towels), then pour disinfectant to saturate the area, and allow disinfectant to soak into spills before cleaning.<sup>14</sup> The absorbent materials used to collect the fluid must be packaged, transported, and disposed of in accordance with state and federal regulations (see section below titled **Waste Disposal**). After cleaning and disinfection are complete, liquids including used cleaning solution may be disposed of by pouring them down the drain to the sanitary sewer or individual septic system.
12. Inspect area to ensure that all affected areas and items have been treated.
13. Disinfect reusable cleaning equipment with an EPA- and DEC-registered disinfectant that can kill non-enveloped viruses. If they can't be cleaned and disinfected, they must be packaged, transported, and disposed of in accordance with state and federal regulations (see section below titled **Waste Disposal**).
14. Remove PPE before leaving the work area following the detailed guidance provided in

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<sup>13</sup> Available at: [https://www.osha.gov/Publications/OSHA\\_FS-3756.pdf](https://www.osha.gov/Publications/OSHA_FS-3756.pdf)

<sup>14</sup> Consideration may be given to applying disinfectant first, followed by absorbent and then additional disinfectant on rough or uneven surfaces or when using absorbents such as clay that could reduce disinfectant efficacy.

Attachment 1 and by OSHA.<sup>15</sup> Disinfect reusable PPE with an EPA- and DEC-registered disinfectant that can kill non-enveloped viruses. PPE that cannot be cleaned and disinfected must be packaged, transported, and disposed of in accordance with state and federal regulations (see section below titled **Waste Disposal**).

15. Wash hands and all exposed skin thoroughly with soap and water when cleanup is complete.

## **Waste Disposal**

Professional cleaning contractors are responsible for ensuring disposal of waste in accordance with New York State and federal regulations. The cleaning contractor should develop a waste management plan to address packaging, transportation, treatment and disposal of waste materials as part of the overall cleanup plan. Any material contaminated with blood and body fluids must be carefully handled, packaged, and transported in accordance with U.S. Department of Transportation (DOT) regulations for Category A infectious substances, or with an applicable DOT waiver. Refer to the DOT document titled “Procedural Guidance on the Proper Packaging of Ebola Suspected Waste.”<sup>16</sup> Additionally, New York State Department of Environmental Conservation (DEC) regulations require that the transporter be permitted to transport regulated medical waste (RMW).

With respect to disposal, DEC regulations require that the waste be disposed of at a facility permitted to accept RMW. For more information on RMW disposal, see DEC’s webpage titled “New York State Ebola Waste Disposal Fact Sheet”, available at: <http://www.dec.ny.gov/chemical/99119.html>.

## **Contractor Compliance with Applicable Regulations**

As with all private employers in the U.S., professional contractors must comply with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens (29 CFR 1910.1030), Hazard Communication (29 CFR 1910.1200) and Personal Protective Equipment (29 CFR 1910.132) Standards and all other applicable regulations. Additional information is posted on the OSHA web page for Ebola: <https://www.osha.gov/SLTC/ebola/standards.html>.

## **References and Resources**

1. CDC Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus: <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>
2. CDC Guidance for Safe Handling of Human Remains of Ebola Patients in U. S. Hospitals and Mortuaries: <http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients->

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<sup>15</sup> Available at: [https://www.osha.gov/Publications/OSHA\\_FS-3756.pdf](https://www.osha.gov/Publications/OSHA_FS-3756.pdf).

<sup>16</sup> Available at: [http://phmsa.dot.gov/pv\\_obj\\_cache/pv\\_obj\\_id\\_E7AFD0A1C5DBDDE54BCAAA0A80F9D6898FF50400/filename/suspected\\_ebola\\_patient\\_packaging\\_guidance\\_final.pdf](http://phmsa.dot.gov/pv_obj_cache/pv_obj_id_E7AFD0A1C5DBDDE54BCAAA0A80F9D6898FF50400/filename/suspected_ebola_patient_packaging_guidance_final.pdf)

- [us-hospitals-mortuaries.html](#)
3. US Department of Transportation Guidance for Transporting Ebola Contaminated Items:  
<http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=4d1800e36b978410VgnVCM100000d2c97898RCRD&vgnnextchannel=d248724dd7d6c010VgnVCM10000080e8a8c0RCRD&vgnnextfmt=print>
  4. OSHA Bloodborne Pathogen Standard (29 CFR 1910.1030):  
[https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_id=10051&p\\_table=STANDARDS](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10051&p_table=STANDARDS)
  5. Environmental Protection Agency list of registered antimicrobial products effective against norovirus: [http://www.epa.gov/oppad001/list\\_g\\_norovirus.pdf](http://www.epa.gov/oppad001/list_g_norovirus.pdf).